efficient, forward-looking estimate that accounts for all the factors discussed above.

d) Determining Loop Investments: In General

Q. What investments are included in the loop cost studies?

A. Loop investments include:

(1) Copper feeder, sub-feeder, and distribution cable;

(2) Fiber optic feeder cable;

(3) Remote terminal equipment;

(4) Cross-boxes (SAIs/FDIs) and distribution terminals;

(5) Central office DLC termination electronics (also called central office terminals);

(6) Digital cross-connect panels (DSX-1s) and, for copper and/or UDLC interfaces, main distribution frames (MDFs);

(7) Drop wire;

(8) NIDs.[19] (Although the NID is available as a separate unbundled network element — see below — it is also a component of the loop element);

(9) Loop "structure" (*i.e.*, poles and conduits).

Q. How were the forward-looking investment costs determined for these assets?

A. The forward-looking investment costs for cable investments were calculated from data contained in the VRUC database. This database includes the total installed investments associated with fiber and copper cable, which includes SAI boxes, distribution terminals, drop wires, NIDs, and installation and engineering costs. Material prices for some equipment, such as electronic equipment, are derived from negotiated contract prices Verizon VA has with the manufacturers of the circuit equipment, including applicable vendor

[19] For DS1 loops, a NID with additional functionality, sometimes referred to as a "smart jack," is required at the end user premises to support the isolation and testing and troubles reported by a CLEC to Verizon VA. The DS1 NID is activated remotely by a digital code that is sent during installation and maintenance activities. The code activates a loopback relay that breaks the DS1 circuit to the end user and closes a path between the network transmit and receive pair. The NID allows the tester to confirm the integrity and performance of the DS1 loop without having to dispatch a technician to the site, and represents the most efficient means currently available for carrying out this testing function.

discounts. Pole and conduit costs are determined based on a separate study utilizing Verizon VA's reports. The relevant workpapers can be found in the Unbundled Loop Study, Common Inputs Part B, Sections 2.1 and 2.3.

Q. Were investment loadings applied to the loop investments?

A. Cable investment data derived from VRUC already incorporate the costs of engineering and installation. Furthermore, cables neither utilize central office power nor are housed in central office buildings, so the Power and L&B factors do not apply to loop investment. The digital loop electronics investments, however, do require loading factors to determine the amount of engineering and installation, power, and land and building costs that should be factored in. The remote terminal investments have no L&B or Power factors applied, but the EF&I investment loading factors are applied to all electronics investments.

Q. How was investment in loop structure addressed in the cost studies?

A. Structure investment for pole and conduit was calculated based on the amount of aerial cable (length) times the pole investment per foot and the amount of underground cable (length) times the conduit investment per foot.

Q. In view of the fact that cables used for the loop and interoffice transport elements may be supported by the same structure, what measures were taken to prevent double recovery of structure investment?

A. Structure costs for copper cables were computed on a per-foot basis, then divided by the installed cable size (measured in pairs), and then multiplied by the number of pair-feet of cable used for each element. Structure costs for fiber cables were computed on a per-foot basis, then divided by the capacity of the cables (measured in strands), and then multiplied by the number of strand-feet of cable used for each element. This approach appropriately allocates total structure cost to the loop and transport elements based on the number of pair-feet of cable or strand-feet of fiber used for each element.

Q. What measures were taken to prevent over-recovery of the cost of structure that is shared by Verizon VA and other utilities?

A. In determining structure investment, Verizon VA's study took account of the fact that some poles are jointly owned with other utility companies. Only that portion of the structure investment owned by Verizon VA was considered in the study. Moreover, any revenues received by Verizon VA for pole attachments and conduit rentals were offset against the ACFs for pole and conduit maintenance.

e) Forward-Looking Loop Costs

Q. How did Verizon VA determine the costs of forward-looking loops for purposes of its studies?

A. Verizon VA utilized LCAM to develop the investments and costs associated with an unbundled loop. LCAM derives loop plant characteristics using (1) the technical assumptions described above, (2) a survey of outside plant data for each UAA conducted by Verizon VA's engineers, and (3) and the LEAD database. Verizon VA applied these inputs in the LCAM model to produce the costs of the forward-looking loop configurations at the wire center level. (As noted above, LCAM is described in the Cost Manual, Attachment B.)

Q. What is VRUC?

A. Vintage Retirement Unit Cost is a database from actual property cost records of the quantities and cost of outside plant resources placed in a given year. This report is used to quantify unit prices by various material item codes (MICs) and by accounting or FRCs. The cable investment inventory is maintained by vintage year, MIC, and FRC. Each MIC is identified as copper cable (with size and gauge), fiber cable (with size), other material (*e.g.*, crossbox), or "obsolete" (*e.g.*, load coils). Obsolete items are excluded. The dollar amounts for each vintage year are inflated by the cumulative Telephone Plant Index for the account based on the year placed to arrive at the forward-looking investment value. The inflated dollars and the quantities of cable are summed, and a weighted average is calculated for each size and gauge (if applicable). Other material investments for non-cable MIC codes are accumulated and expressed as a ratio by accounting coded to include these material investments. The total dollars for all "other material" MICs are divided by the total dollars for all cable MICs, by account, to create an other-material loading factor.

For electronic equipment, the EF&I factors are applied to equipment prices, as explained above. L&B and Power factors are applied to COT investments only.

Q. How were the loop costs for each wire center used to develop loop costs for the density zones that are used to geographically deaverage Verizon VA's loop costs?

A. For each of the three density zones in Virginia, the forward-looking loop cost is calculated as a working access line weighted average of the wire center loop costs.

2. xDSL-Compatible Loops and Line Sharing

Q. What does this next portion of the testimony address?

A. This portion of the testimony addresses the recurring costs associated with xDSL-compatible loops, including loop qualification and line conditioning costs, as well as the non-recurring costs associated with those activities. This testimony also addresses costs associated with line sharing.

a) xDSL-Compatible Loops

Q. What are xDSL technologies?

A. The term "xDSL" describes a family of transmission technologies that use specialized electronics at the customer's premises and at a telephone company's central office (or other company facility)[20] to transmit high-speed data signals over copper cables. Thus, xDSL does not refer to any particular *service*, but to a family of *technologies* that are used to provision a wide variety of services. Asymmetrical Digital Subscriber Line (ADSL) and High Bit-Rate Digital Subscriber Line (HDSL) are two members of this technology family.

xDSL technologies are inherently copper-based and are offered only using copper loops.[21] If and when it becomes efficient to construct networks

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[20] In the case of ADSL, discussed below, the equipment at the customer premises is commonly referred to as an ADSL Terminal Unit — Remote (ATU-R). The equipment at the other end of the circuit is commonly referred to as a Digital Subscriber Line Access Multiplexer (DSLAM).

[21] While it is possible to utilize xDSL technologies on loops equipped with DLC technology, such applications involve the placement of DSLAMs at the remote terminal rather than at the central office. In such cases, the use of xDSL technology is limited to the copper distribution portion of the loop; the technology

(Continued . . .)

using entirely (or primarily) fiber-based facilities to subscribers, xDSL will be displaced by fiber-based transmission technologies, which can exceed the speed and capacity of xDSL.

Q. What are xDSL-compatible loops?

A xDSL-compatible loops are two- or four-wire copper loops that will support the transmission of ADSL, HDSL, and Symmetrical Digital Subscriber Line (SDSL) signals. Verizon VA offers two- and four-wire copper loops that provide CLECs with the different design characteristics they need to offer the xDSL technology of their choice. Where a CLEC requests an xDSL-compatible loop, the loop will extend from the interconnection point at the CLEC's collocation point in the Verizon VA central office to the customer's premises. In order to be xDSL-compatible, a loop must not include fiber transmission facilities or other impediments such as load coils or excessive bridged taps. xDSL-compatible loops are sometimes referred to as "qualified" loops.

(Footnote continued)

would not be used on the fiber feeder facilities between the terminal and the central office. Thus, even in such applications, the use of the technology would still be limited to situations in which at least the distribution cables were copper.

Q. When Verizon VA provides a CLEC with a qualified xDSL-compatible loop, are any xDSL electronics included?

A. No. Verizon VA does not provide the xDSL terminating electronics at either end of the transmission path. Those are provided by the CLEC, its customer, or a third party.

Q. What is the forward-looking technology for xDSL-compatible loops?

A. The "most efficient technology currently available" for xDSL transmission consists of copper cables. Fiber extension of xDSL-transported services, involving the placement of either a stand-alone remote DSLAM at the RT or a DSLAM integrated in a POTS DLC RT, has not been deployed in Virginia. Moreover, what CLECs have requested from Verizon VA are copper transmission paths to which the CLECs can attach their own xDSL electronics, provided by their own vendors and adapted to the services that they intend to offer. These electronics would not function properly over DLC systems. While Verizon VA is not including copper loops in its forward-looking network construct *specifically* to ensure the availability of xDSL-compatible loops, xDSL technologies can be utilized only for as long as such copper continues to be part of the network,[22] as it will be for the foreseeable future.

Q. What rate is Verizon VA proposing to charge for xDSL-compatible loops?

A. Verizon VA is not proposing at this time to impose a recurring charge in connection with an xDSL-compatible loop that is different from the charge associated with the underlying two- or four-wire analog loop. Verizon VA believes that this may under-recover the true costs of providing xDSL loops, and Verizon VA reserves its right to seek full recovery of the cost to provide xDSL-compatible loops in the future.

Q. Are any additional recurring costs associated with provisioning xDSL-compatible loops?

A. In order to provide xDSL-compatible loops, the loops served from the terminal serving the end user's address must be qualified. To assist CLECs in determining which Verizon VA loops are qualified, Verizon VA has established and maintains a mechanized loop qualification database.

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22 *See UNE Remand Order* at 3788-89 ¶ 204 n. 390 ("xDSL cannot work over fiber, and it generally requires a 'clean' (*i.e.*, conditioned) copper loop.").

Monthly recurring costs have been identified by Verizon VA in connection with that database, as discussed below. (VZ-VA CS, Vol. IV, Part B-13.) (As described below, Verizon also has deployed and maintains the Loop Facility Assignment and Control System (LFACS) database, which is used as a source of some qualification information, but no costs are provided in this study in connection with that database.) Additionally, incremental investments and associated monthly costs have been identified for Wideband Test System (WTS) capability on xDSL-compatible loops. WTS costs apply to line sharing and line splitting and are addressed later in the Line Sharing section of the testimony.

Q. Are any non-recurring costs associated with provisioning xDSL-compatible loops?

A. In addition to the non-recurring costs for the two-wire or four-wire loop, there are non-recurring costs specifically associated with loop qualification, loop conditioning, and cooperative testing. CLECs may seek additional loop information other than what is available through Verizon VA's mechanized loop qualification process; that is, the CLEC can opt to request the following manual qualification services: (1) manual loop qualification and/or (2) an engineering query. There are non-recurring costs associated with each of these services. Additionally, after receiving the additional loop qualification information, the CLEC may request that Verizon VA condition the loop by removing bridged taps or load coils. Verizon VA will impose a non-recurring charge if a CLEC requests that Verizon VA remove either bridged taps, when the length of the bridged taps is less than 6,000 total feet, or load coils on loops of greater than 18,000 feet. Another form of loop conditioning for which a non-recurring cost is incurred is the addition of electronic repeaters to enhance ISDN services.

The cost studies for manual loop qualification, engineering query, and the removal of bridged taps and load coils are found in Verizon VA's NRC study, VZ-VA CS, Vol. XI, Part H, Section H. The cost study for the addition of ISDN electronics can be found in the VZ-VA CS, Vol. IV, Part B-13. Lastly, a non-recurring cost is incurred when a CLEC requests cooperative testing during or after the provisioning process. The non-recurring cost for cooperative testing can be found in VZ-VA CS, Vol. XI, Part H, Section H. All these non-recurring costs are described further below.

b) Mechanized Loop Qualification

Q. Please provide an overview of the loop qualification process.

A. The primary means by which CLECs obtain loop qualification information is by submitting queries to Verizon VA's automated loop qualification Database (the "Database").

A CLEC that seeks to offer xDSL-based services should be able to get all of the qualification information it needs from the Database. If the

CLEC seeks more specific information (because, for example, it wants to provide services with more stringent technical requirements than xDSL), it can request loop makeup information in LFACS; if the detailed loop makeup information is not available in LFACS, the CLEC then can request that an engineering query be performed.

Q. What information can a CLEC obtain from the Database and from LFACS and how is it obtained?

A. A CLEC can submit a query to the Database through Verizon VA's standard Operations Support System wholesale interfaces. The query may seek qualification information by either telephone number or address. The principal loop qualification information that is available from the Database and that would be of interest to CLECs is the total metallic loop length (including bridged taps) as determined by an MLT test.[23] The Database also will indicate whether the loop is qualified for the offering of xDSL service. A loop is deemed qualified for xDSL if the total loop length, including any

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[23] An MLT test determines the effective length (including any bridged tap and customer and CO wiring) of a loop by measuring its capacitance. The process involves sending a voltage pulse from testing equipment located in an MLT test center, through a central office switch port, and through the loop being tested. Only working loops, *i.e.*, loops connected to a switch port and provided with dial tone, can be MLT-tested.

bridged tap, is less than 18,000 feet, the loop is not served by DLC, and T-1 is absent from the loop's binder group.[24]

While the Database is accessed by entering a particular telephone number or address, the loop qualification information is generated and stored on a terminal-by-terminal basis. The information returned from the Database for the particular telephone number or address indicates whether qualified loops exist within the terminal serving the specific location in question. If the system indicates that the terminal contains loops that are qualified, the CLEC can order xDSL-compatible loops.

LFACS contains information specific to telephone numbers, such as whether a specific phone number is on DLC or copper. LFACS also may contain information about the physical makeup of the specific loop. CLECs can request and receive certain information contained in LFACS electronically.

Q. How was the Database created?

A. The creation of the Database for a particular terminal involves MLT testing of a sample of the loops in that terminal. The loop length information

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[24] A "binder group" is a bundle of pairs, typically 25, that are adjacent to each other within a cable. Transmission of T-1 signals can interfere with xDSL transmission in nearby pairs, and vice versa.

obtained from the MLT test is then associated in the Database with the telephone number and address of each of the loops served by that terminal.[25]

On an ongoing basis, the Database is updated to reflect any changes in loop qualification information resulting from modifications or rearrangements to loop facilities (*e.g.*, the upgrading of a particular loop from copper to DLC). The costs associated with running the MLT tests and maintaining the Database are presented in the VZ-VA CS, Vol. IV, Part B-13, and are explained in further detail later in this section.

Q. How many offices are currently included in the Database?

A. There are 215 wire centers in Verizon VA. The pre-qualification process described above has been performed in 102 of the 105 wire centers that have collocation arrangements. This represents more than 99% of all the loops to the wire centers with collocation.

Q. Why doesn't the Database include all information that might be of interest to CLECs intending to offer xDSL-based services, so that

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[25] A preliminary step in the bulk testing process is generating a file listing the loops to be tested. Terminals that contain T-1 in the same binder group or that have less than a specified percentage of non-DLC loops are excluded from these files. Thus, loops in such terminals are not MLT-tested, and the terminals are simply recorded in the Database as non-qualified.

CLECs do not need to resort to the manual loop qualification or engineering query processes?

A. The Database has been developed and expanded to support the provision of xDSL services by CLECs using the most efficient means available. Since xDSL is a copper-based service, sensitive to the length of loop, the most practical and efficient approach was to use MLT to determine loop lengths and also to identify those loops that cannot support xDSL services, such as those that contain load coils or are provisioned using IDLC. Assembling detailed information on other characteristics such as cable gauges, load coil locations, bridged tap length, etc., for all of Verizon VA's loops — and using it to populate a greatly expanded Database — would require a massive and very expensive effort. Paper records ("cable plats") would have to be reviewed for literally millions of loops. This would greatly expand the cost of the Database for all carriers, including those whose chosen technologies do not require such detailed information. In contrast, under Verizon VA's less extravagant approach, unnecessary costs are not incurred to review cable plats for loops that may never be used to offer xDSL-based services; instead, as discussed above, the qualification information is being added to the Database incrementally as collocation expands. Moreover, under Verizon VA's approach, the costs of paper-record review are imposed in a cost-causative manner only on those CLECs whose services require the additional information.

Q. Is Verizon required to provide CLECs with all the information they request via a mechanized process?

A. No. The Commission noted:

> We disagree, however, with Covad's unqualified request that the Commission require incumbent LECs to catalogue, inventory, and make available to competitors loop qualification information through automated OSS even when it has no such information available to itself. ***If an incumbent LEC has not compiled such information for itself, we do not require the incumbent to conduct a plant inventory and construct a database on behalf of requesting carriers.*** We find, however, that an incumbent LEC that has manual access to this sort of information for itself, or any affiliate, must also provide access to it to a requesting competitor on a non-discriminatory basis. In addition, we expect that incumbent LECs will be updating their electronic database for their own xDSL deployment and, to the extent their employees have access to the information in an electronic format, that same format should be made available to new entrants via an electronic interface.[26]

Q. What charges are associated with the mechanized Database?

A. As mentioned above, Verizon VA has proposed a recurring Mechanized Loop Qualification Charge to recover a pro-rated share of the cost of creating and maintaining the Database.[27] This is a recurring monthly charge imposed

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[26] *UNE Remand Order* at 3885-86 ¶¶ 427, 429 (emphasis added).

[27] Moreover, with respect to creation of the Database, only the costs associated with MLT testing are recovered in the charge. Any additional costs (for example, the costs associated with excluding from MLT test files loops equipped

(Continued . . .)

on all xDSL-capable loops and line sharing and line splitting arrangements ordered by CLECs.

Q. Is the cost of creating the Database a historical or a forward-looking cost?

A. The cost used for the purpose of estimating the recurring charge is not based on the actual (*i.e.*, historical) costs of creating and maintaining the Database, but rather on the estimated, forward-looking costs of the functions involved in Database creation and maintenance.

Q. Please explain how the Database creation costs were determined.

A. The Database creation costs are essentially the costs of performing MLT tests for a sample of loops in each terminal in the offices included in the Database. Testing costs are determined by multiplying the average testing time per loop[28] by the relevant labor rate. This generates a per-loop cost. The total

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(Footnote continued)

with DLC technology or loops located in binder groups with T-1 facilities) are not recovered in the wholesale charge. No costs related to the LFACS are included in the Mechanized Loop Qualification rate.

[28] The cost-per-line (pair) tested was calculated by dividing the time taken to test a number of terminals by the total number of pairs in these terminals

(Continued . . .)

testing cost is then determined for the five-year period that will be required to qualify all of Verizon VA's loops and is reduced to its net present value (NPV). This total cost is then divided by the forecasted number of wholesale and retail xDSL loops (*e.g.*, xDSL-compatible loops and line sharing and line splitting arrangements) that Verizon VA will be providing, also computed over a five-year period and reduced to an NPV basis. The result is an average testing cost per loop utilized for xDSL transmission. This cost was amortized over a 30-month period (representing an average "service life" for a customer's use of a retail xDSL-based service) to arrive at a monthly recurring cost.

Q. What activities are involved in Database maintenance?

A. The activities involved in Database maintenance are related to program changes, loading and extracting data, and updating records in the Database by engineers in the Facilities Management Center (FMC). In general, these

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(Footnote continued)

and multiplying the result by the relevant labor rate. Thus, if it took 10 minutes to test terminals with a total of 1200 lines, the cost-per-line would be 0.0083 minutes (10/1200) multiplied by the relevant labor rate. The actual number of lines physically tested was in fact only a sample of the total number of lines across which the testing costs were spread. (For terminals with between 10 and 100 lines, 10 lines were tested. For terminals with more than 100 lines, 20 lines were tested.)

activities will be conducted on an ongoing basis as a consequence of changes in facilities, growth in loop plant, and CLEC requests for additional information not originally included in the Database.

This expense is entirely distinct from the computer operations, software development, and Database management type expenses assigned for recovery through ACFs under such USOA Accounts as 6724 (Information Management).

Q. Please explain the maintenance component of the Mechanized Loop Testing Charge.

A. The cost was developed by identifying the cost of program development and refinements, loading and extracting data, and other ongoing maintenance activities. Next, the cumulative number of lines qualified over the planning period, by year, multiplied by the cost previously developed. The forecasted number of subscribers requesting xDSL over the five-year planning period was also brought back, on an NPV basis, to the current year to match these expenses. The total Database maintenance expense was then divided by the total forecasted number of xDSL, line sharing, and line splitting loops ordered by CLECs and converted to a monthly expense. The relevant cost study results can be found in VZ-VA CS, Vol. IV, Part B-13, Page 5.

Q. Are any costs imposed in connection with the development or maintenance of the LFACS?

A. No.

c) xDSL Non-Recurring Costs

Q. You stated that there were non-recurring costs associated with Verizon VA's xDSL offering; please explain those costs.

A. As noted above, Verizon VA has proposed non-recurring costs associated with xDSL-compatible loops for two categories: (i) loop qualification, including manual loop qualification and engineering query; and (ii) loop conditioning, including removal of load coils, removal of bridged taps and engineering work orders. In addition, cooperative testing costs are applied to the provisioning of xDSL-compatible loops when CLECs request such testing.

i) Loop Qualification

Q. Can you explain non-recurring loop qualification charges?

A. As noted, Verizon VA has a mechanized loop qualification process that queries a Database to determine whether a particular loop can be used for xDSL. If a CLEC wishes additional information, Verizon VA will impose manual loop qualification and/or engineering query non-recurring charges associated with checking other databases, performing tests on the loop, and checking paper records. The development of the costs associated with these non-recurring rates is found in VZ-VA CS, Vol. XI, Part H, Section H.

Q. Please describe the Manual Loop Qualification process.

A. The Manual Loop Qualification process requires the engineering clerk to review cable plats specifically for the presence or absence of both load coils and DLC. Additionally, the clerk is required to compute the total loop length, including bridged taps. As a result of this process the CLEC will be advised if the loop is qualified for xDSL per Verizon standards.

Q. Please explain the Engineering Query process.

A. The Engineering Query process provides a CLEC with additional loop makeup information beyond the information provided by a manual loop qualification. The engineering work activities include determining the location and length of bridged taps; the number and location of load coils, if any; the length and gauge of cable segments; the location of the DLC remote terminal and the type of DLC (if present); and the presence of potential T-1 disturbance. Determining the location of the load coils and DLC is an incremental step beyond that of the Manual Loop Qualification, as is obtaining all of the information provided on bridged taps and cable gauge. The only similarity between the two activities is that the information is found on the same cable plats referred to in the Manual Loop Qualification.

ii) Loop Conditioning

Q. What xDSL loop conditioning costs has Verizon VA proposed in this proceeding?

A. Verizon VA has proposed costs for the engineering work orders, removal of bridged taps and load coils, and cooperative testing.

Q. Has the Commission ruled that ILECs, like Verizon VA, are entitled to recover loop conditioning costs?

A. Yes. The Commission has unequivocally ruled at least three times that ILECs are entitled to recover conditioning costs. Indeed, in the *UNE Remand Order*, the Commission not only upheld the recoverability of loop conditioning costs, but also went further and ruled that load coil removal costs would be recoverable even where load coil placement would *not* be called for under current network standards:

> In the *Local Competition First Report and Order*, the [Commission] also stated that requesting carriers would compensate the incumbent LECs for the cost of conditioning the loop. Covad and Rhythms argue that, because loops under 18,000 feet generally should not require devices to enhance voice transmission, the requesting party should not be required to compensate the incumbent for removing such devices on lines of that length or shorter.

> We agree that networks built today normally should not require voice-transmission enhancing devices on loops of 18,000 feet or shorter. Nevertheless, the devices are sometimes present on such loops, and the incumbent LEC may incur costs in removing them. ***Thus, under our rules, the incumbent should be able to charge for conditioning such loops.***[29]

Bridged taps and load coils are a permissible and necessary network component for existing POTS service, and the need to deal with them is a part of the normal cost of doing business for all carriers — ILECs and CLECs alike. Verizon VA should not have to absorb the cost of modifying network components that rely on copper as a transmission medium to support a CLEC's provision of xDSL services. Therefore, Verizon VA has proposed a set of non-recurring charges to recover these costs (the removal of bridged taps and load coils) from the CLEC who causes these costs to be incurred. The relevant cost study results can be found in the NRC study and in VZ-VA CS, Vol. XI, Part H, Section H, Page 2, Lines 68-75.

Q. Are loop conditioning costs recovered in Verizon's recurring costs for network maintenance?

A. No. Verizon does not remove bridged taps and load coils as part of routine maintenance, but only as a result of specific customer requests for xDSL

[29] *UNE Remand Order*, 3784 ¶¶ 192-93 (footnotes omitted) (emphasis added).

services. Removing load coils randomly could degrade voice services and removing bridged taps randomly could result in service disconnection and reduced utilization of loop plant. Verizon VA therefore removes load coils and bridged taps only where necessary to provision xDSL.

Q. Are the work times and costs associated with loop conditioning and loop qualification estimated in the same manner as for the other non-recurring costs described in this panel testimony?

A. Yes. As described more fully in the non-recurring cost section of this testimony and in VZ-VA CS, Vol. XI, Part H, Section A, Verizon surveyed managers experienced in performing and supervising this work to obtain time estimates for this work. Typical occurrence factors and forward-looking adjustment factors were then applied to obtain the forward-looking time estimates for the work activities required to complete the specific qualification and conditioning tasks. (For a more complete description of the methodology employed for determining non-recurring costs, please see the section on the development of non-recurring costs or VZ-VA CS, Vol. XI, Part H, Section A.)

Q. What is the Engineering Work Order?

A. The Engineering Work Order process includes certain general preliminary functions associated with loop conditioning activities. These include